



I-35E MnPASS Extension Study

May 14, 2014
Steering Committee Meeting

We all have a stake in **A  B**



Agenda

- ▶ Introductions and Overview
 - Brad Larsen, MnDOT
- ▶ Community Dialogues Update
 - Lee Munnich & Emily Saunoi–Sandgren, U of M Humphrey School
- ▶ Concept Development Findings and Recommendations
 - Nick Thompson & Peter Muehlbach, Parsons Brinckerhoff
- ▶ Feedback on Concept Development Findings and Recommendations
 - Steering Committee Members
- ▶ Land Use & Transit Enhancement Update
 - Lynne Bly, MnDOT



I-35E MnPASS Extension Study

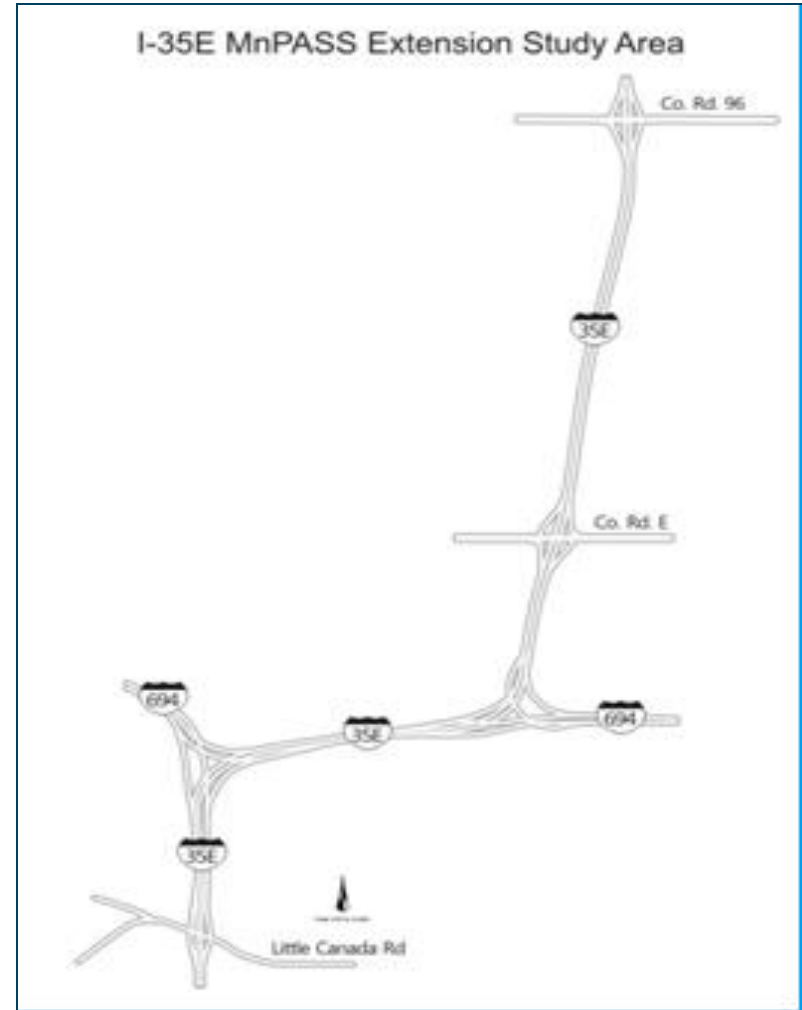
Snapshot

Study will develop and evaluate conceptual options for extending MnPASS Express Lanes on I-35E between Little Canada Road and CR 96

Study will also identify and evaluate methods for improving bus transit and carpool use in the MnPASS lanes on I-35E

Study website:

<http://www.dot.state.mn.us/metro/projects/i35emnpassextension/index.html>



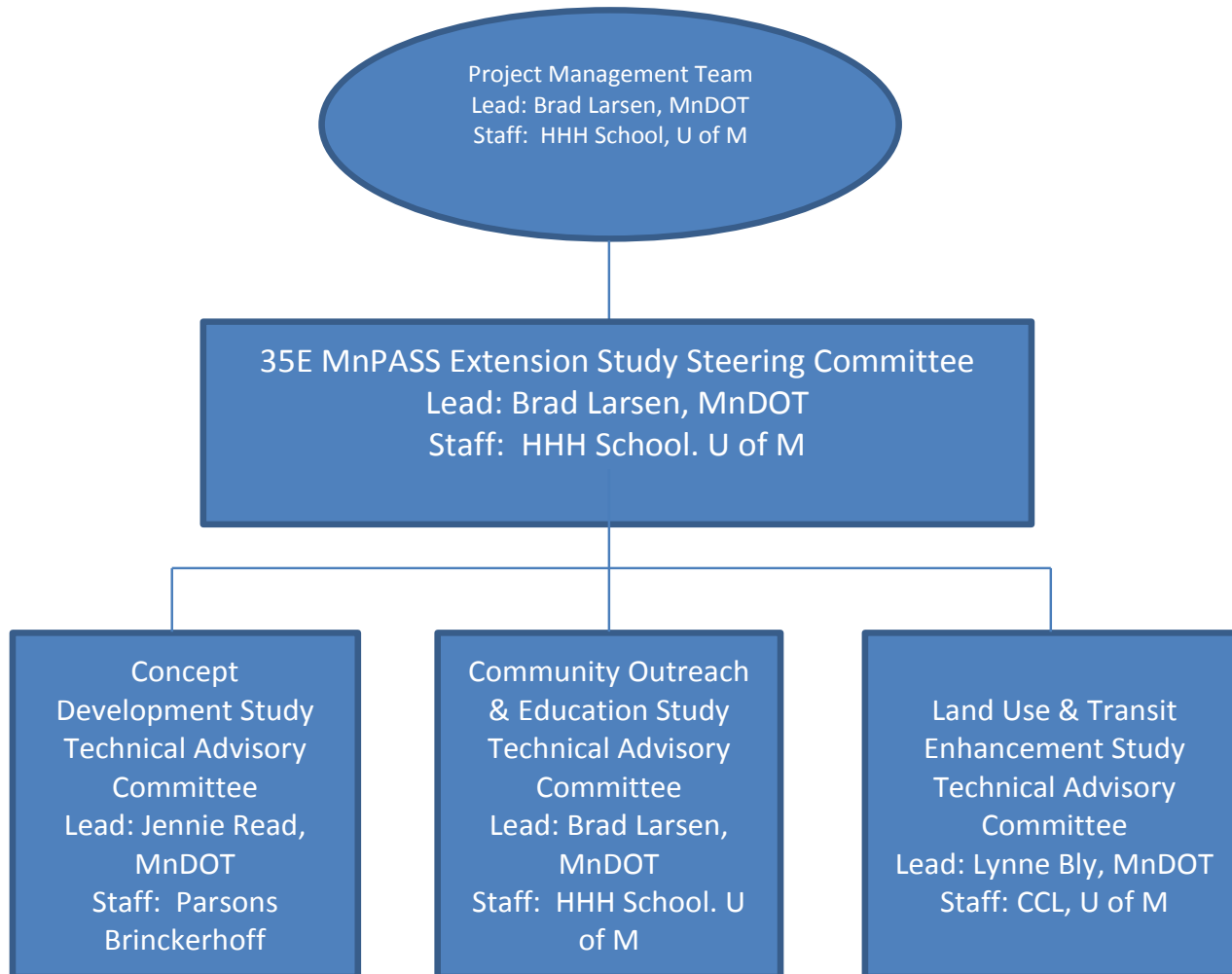
I-35E MnPASS Extension Study

- ▶ Study is –
 - A process for helping determine whether there is a feasible, viable option for extending MnPASS lanes between Little Canada Rd. and CR 96 in 2016 when a construction and funding opportunity exists
- ▶ Study is not –
 - The federally required environmental (NEPA) process
 - A process for determining whether MnPASS should be implemented in the I-35E corridor
 - 2030 Transportation Policy Plan designated I-35E north of St. Paul as a MnPASS Managed Lane corridor
 - MnPASS lanes on I-35E between Cayuga St. and Little Canada Rd. are under construction and due to open by Nov. 2015



I-35E MnPASS Extension Study

Project Management Structure



Study Timeline

		Aug-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14
I-35E MnPASS Extension studies												
PMT meetings		X	X	X		X		X			X	X
Steering Committee meetings				X				X				X
Key MnDOT Project Decision								X - End of Month				
Community Outreach and Education		X	X	X	X	X	X	X	X	X	X	X
Project Management Plan completed		X										
Community Dialogues Research Plan		X	X									
Implement Community Dialogues Plan			X	X	X	X	X	X				
Community Dialogues Report						X	X	X				
Communicate Study results								X	X	X	X	X
Concept Development		X	X	X	X	X	X	X	X	X	X	X
Purpose and Need summary and Concept of		X	X	X	X							
Traffic Forecasting		X	X	X	X							
Develop Concept Layout and Cost Options		X	X	X	X	X						
Analysis and Modeling		X	X	X	X	X	X					
Benefit / Cost Analysis					X	X	X					
Technical Findings and Recommendations					X	X	X	X				
Land Use & Transit Enhancement			X	X	X	X	X	X	X	X	X	X
Document/Analyze/Map Existing Corridor			X	X								
Review Literature/Planning Studies/Guidelines			X	X	X	X						
Transit Stop Analysis			X	X								
Initial Public Meetings				X	X	X	X					
Preliminary Site Concepts				X	X	X	X	X	X			
Concept Design Public Meetings								X	X	X		
Refined Concept Designs								X	X	X	X	
Identify Suggestions for Siting Stops/Stations									X	X	X	X



Steering Committee Role & Commitment

- ▶ Review and provide general and specific feedback on study component methodology, findings and conclusions
 - Keys for today's mtg.
 - Provide feedback on Concept Development technical findings and recommendations
 - MnDOT will have to make a decision by the end of May 2014 on whether to move forward with project in order to complete work in 2016
- ▶ Provide participant recommendations for various study components
- ▶ Communicate the study's purpose, approach, and results to other officials in committee members' organizations, as well as to other interested community stakeholders
- ▶ Steering Committee will meet 4–5 times between Sept. 2013 and Dec. 2014





I-35E MnPASS Extension Study:

Community Dialogues

Lee Munnich & Emily Saunoi-Sandgren
University of Minnesota Humphrey School

We all have a stake in **A  B**



Community Dialogues: Purpose

- ▶ By attending a Community Dialogue, participants will have the opportunity to:
 - learn about the vision and plans for MnPASS in the I-35E corridor;
 - become familiar with the MnPASS concept options for extending MnPASS between Little Canada Road and CR 96; and
 - provide their reactions and preferences on the concept options through conversation and a survey instrument.



Community Dialogues: Format

- ▶ Community Dialogues will last 75mn.
 - Welcome & Introductions
 - MnPASS Overview
 - Extending MnPASS concept Options
 - Options–Focused Dialogue
 - Take–Aways & Closing Comments
 - Complete Survey





I-35E MnPASS Extension Study

Community Dialogue

We all have a stake in **A  B**





The Basics of MnPASS

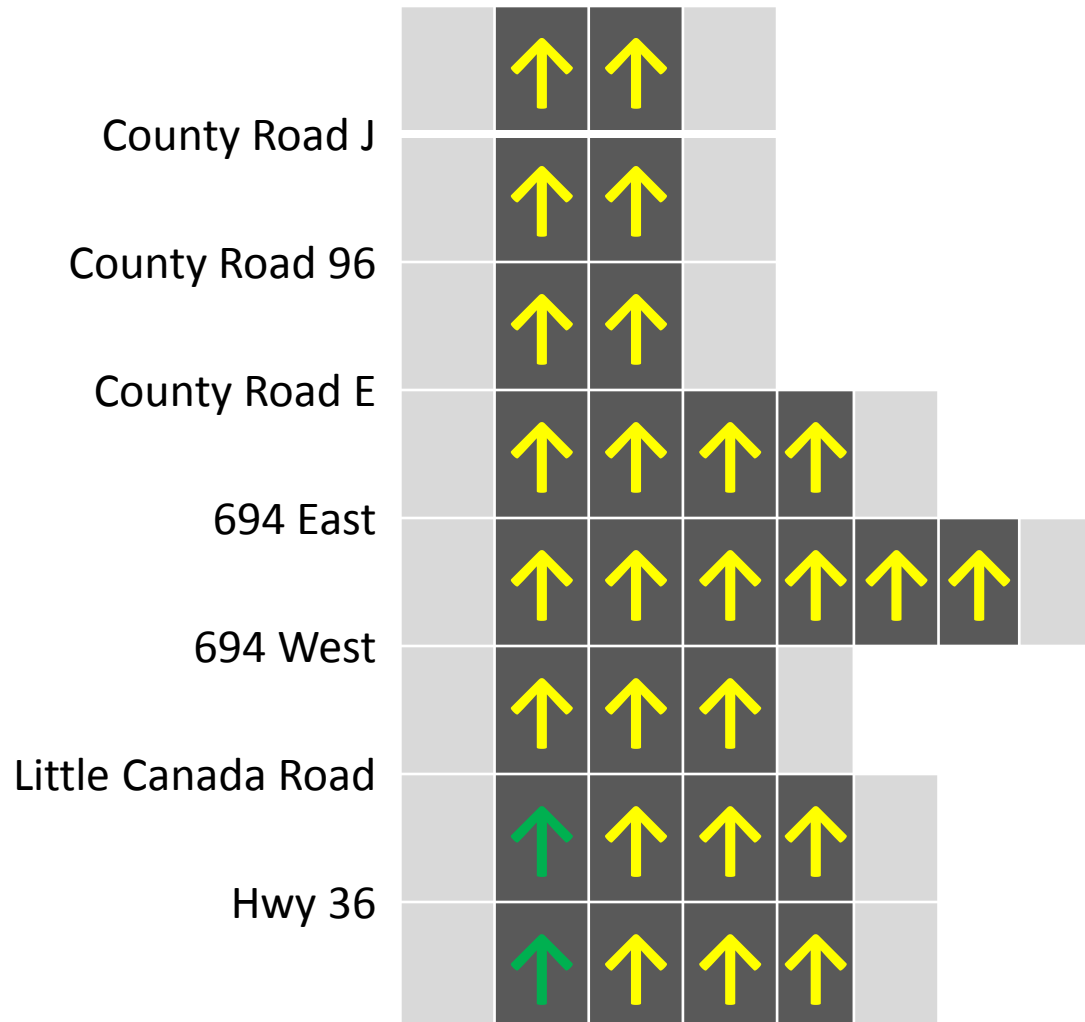
- ▶ **Transit, carpools, and motorcycles** always use MnPASS for free.
- ▶ *No stopping at toll booths.*
- ▶ Tolls **collected electronically** at highway speeds.
 - Pre-paid accounts.
- ▶ **Solo drivers** have **option of paying** to use the uncongested lane.
 - Vast majority only choose to use occasionally, when in a pinch.
 - Average cost is \$1.61 per trip.



Current Plans



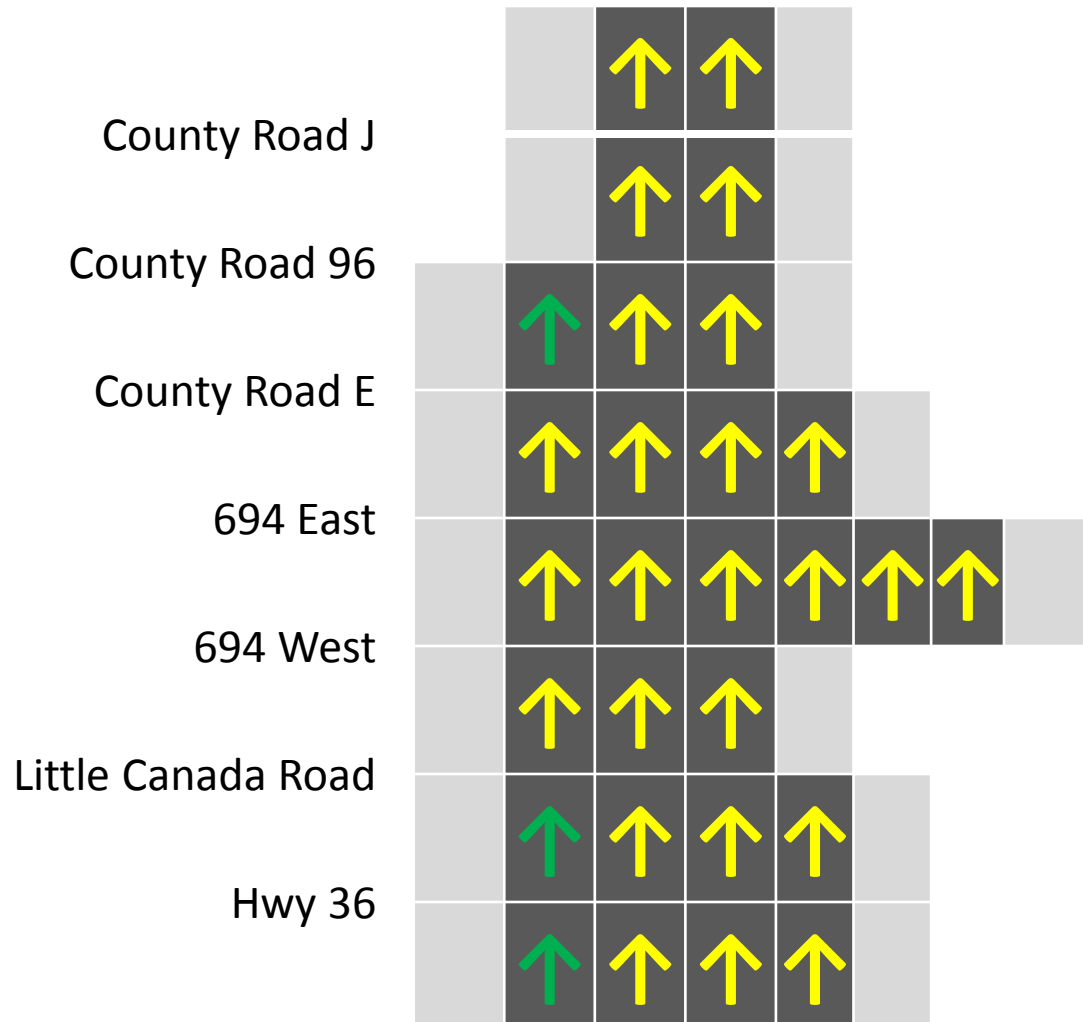
KEY	
Regular Lane	↑
MnPASS Lane	↑
Shoulder	



MnPASS with a Gap



KEY	
Regular Lane	↑
MnPASS Lane	↑
Shoulder	



MnPASS without a Gap



County Road J

County Road 96

County Road E

694 East

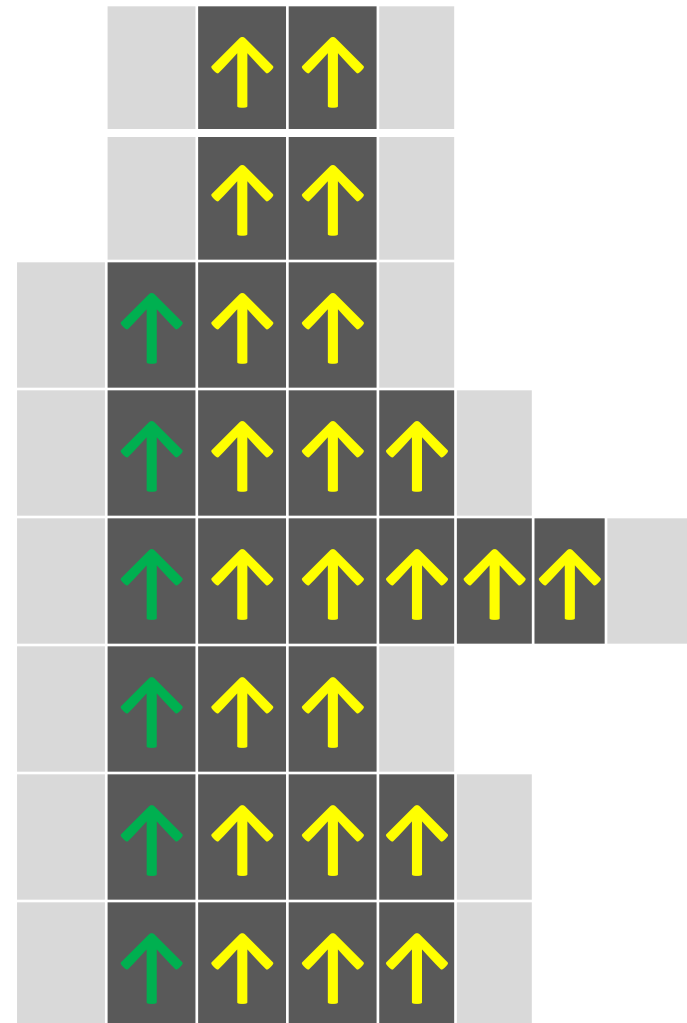
694 West

Little Canada Road

Hwy 36

KEY

Regular Lane	↑
MnPASS Lane	↑
Shoulder	



MnPASS On Shoulder



County Road J

County Road 96

County Road E

694 East

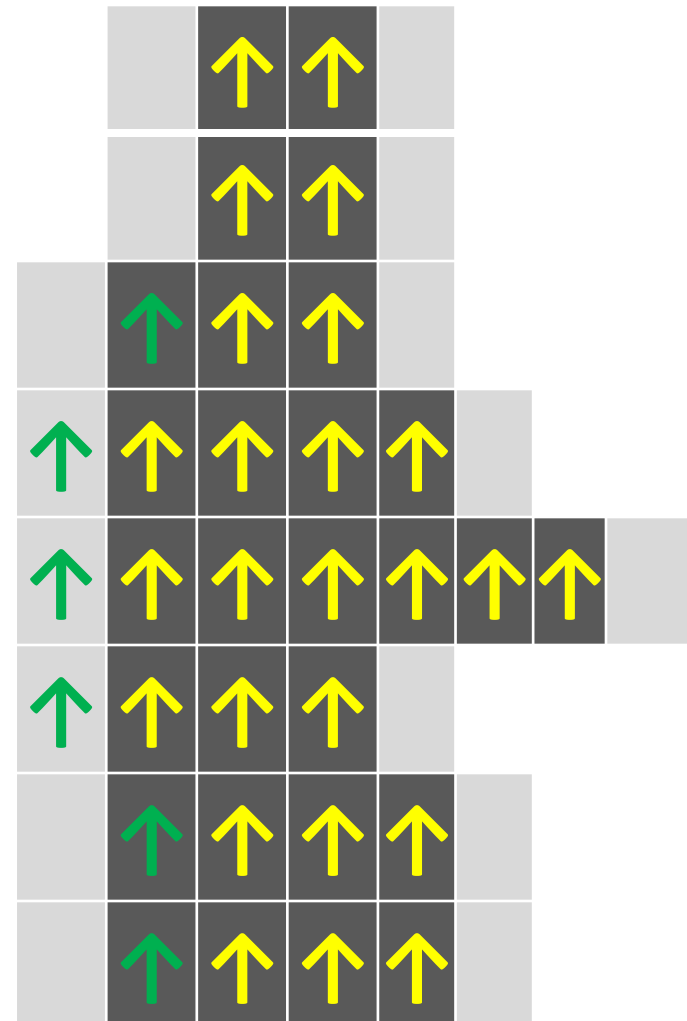
694 West

Little Canada Road

Hwy 36

KEY

Regular Lane	↑
MnPASS Lane	↑
Shoulder	



Community Dialogues: Discussion

Take a moment to
examine these materials.
What stands out to you
that differentiates each
option?

Which option(s)
seems most
advisable to
you? Why?

What questions
do you have
about these
options?

Do you have
reservations about any
of the options? If so,
why?



Community Dialogues: Progress-to-Date

- ▶ 2 Dialogues Completed
 - 1 General Users
 - 1 Professional Drivers
- ▶ Key Impressions
 - Little to no previous knowledge of MnPASS kept focus on managed lanes rather than specific design options
 - Safety and continuity of lane was important



Questions and Discussion





I-35E MnPASS Extension Study:

Concept Development

Nick Thompson & Peter Muehlbach
Parsons Brinckerhoff

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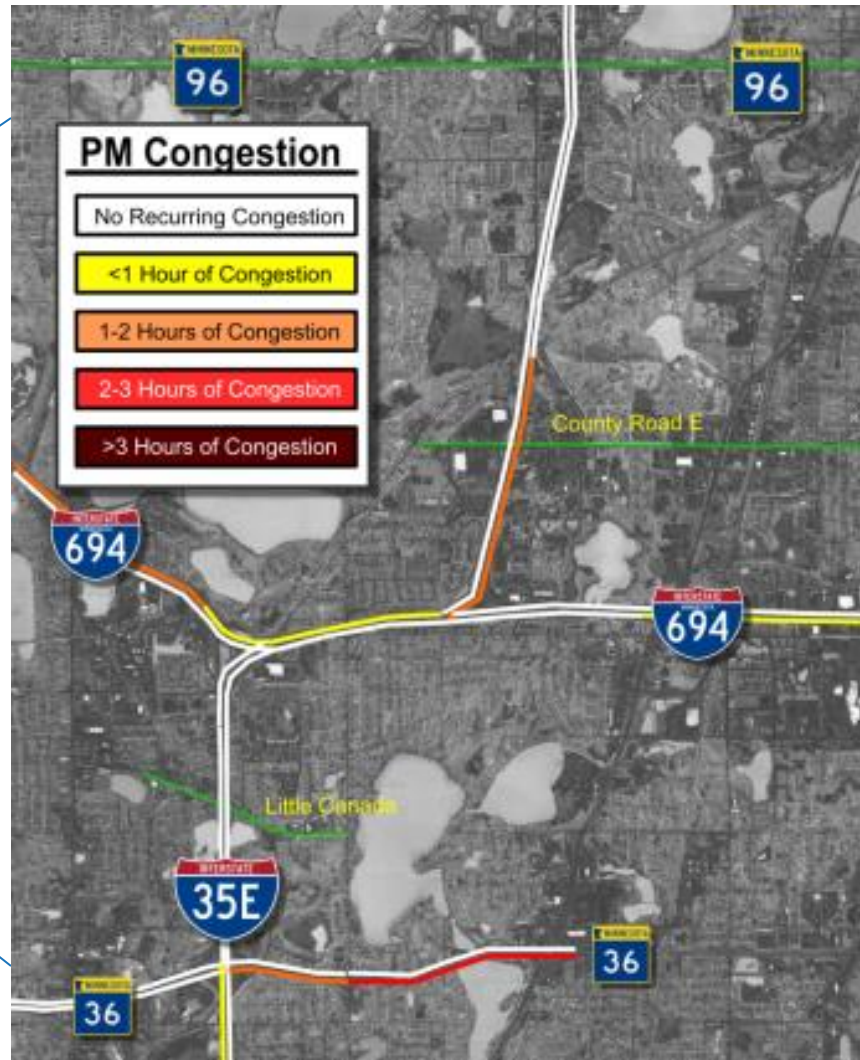
Existing Conditions on 35E



AM PEAK PERIOD CONGESTION, METROPOLITAN FREEWAY SYSTEM 2012.



Existing Conditions on 35E



PM PEAK PERIOD CONGESTION, METROPOLITAN FREEWAY SYSTEM 2012.



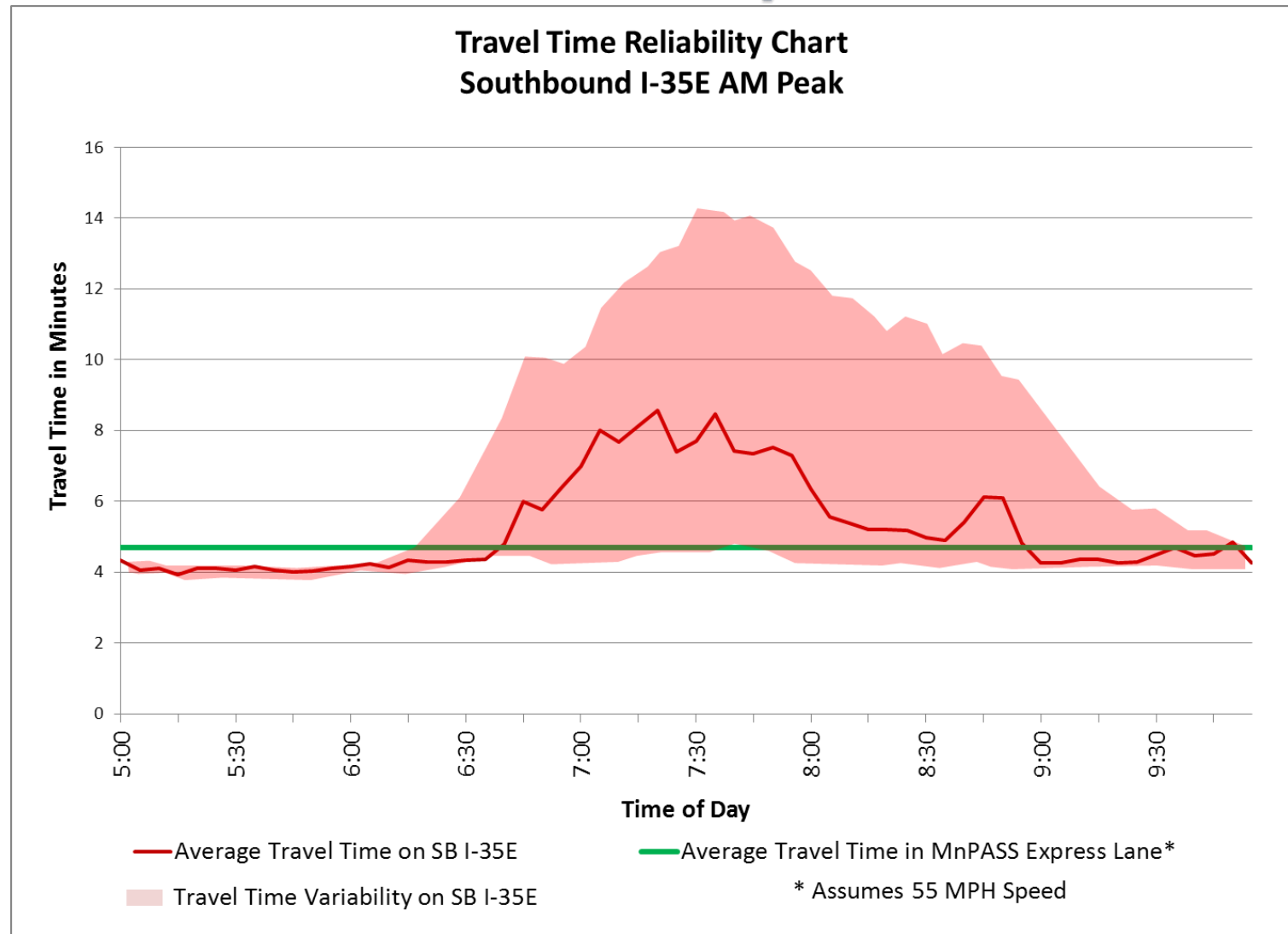
I-35E Corridor Growth Forecast Results

I35E Corridor Growth	Existing Peak Hour Vehicle Count on Weekday	Year 2017 Increase	Year 2030 Increase
AM Southbound	3746	377 (10%)	892 (24%)
AM Northbound	1677	185 (11%)	385 (23%)
PM Southbound	1992	170 (9%)	593 (30%)
PM Northbound	3492	346 (10%)	808 (23%)

NOTE: COMPUTED USING THE 2030 REGIONAL SOCIOECONOMIC FORECAST DATA



Travel Time Reliability and MnPASS



Concepts

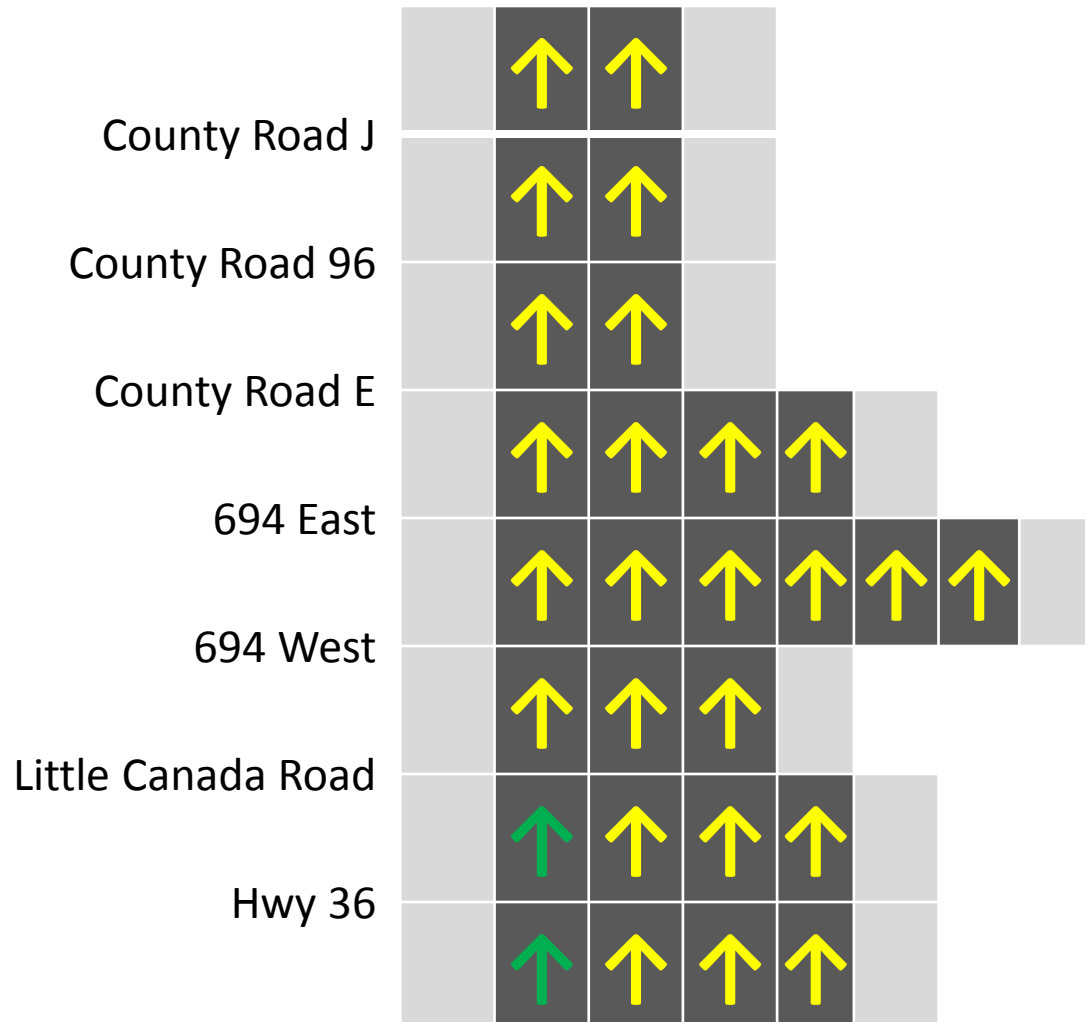
- ▶ Three Concepts considered
 - MnPASS with a Gap
 - MnPASS without a Gap
 - MnPASS on a shoulder
- ▶ The Concepts are compared to doing nothing (No Build concept)



Current Plans



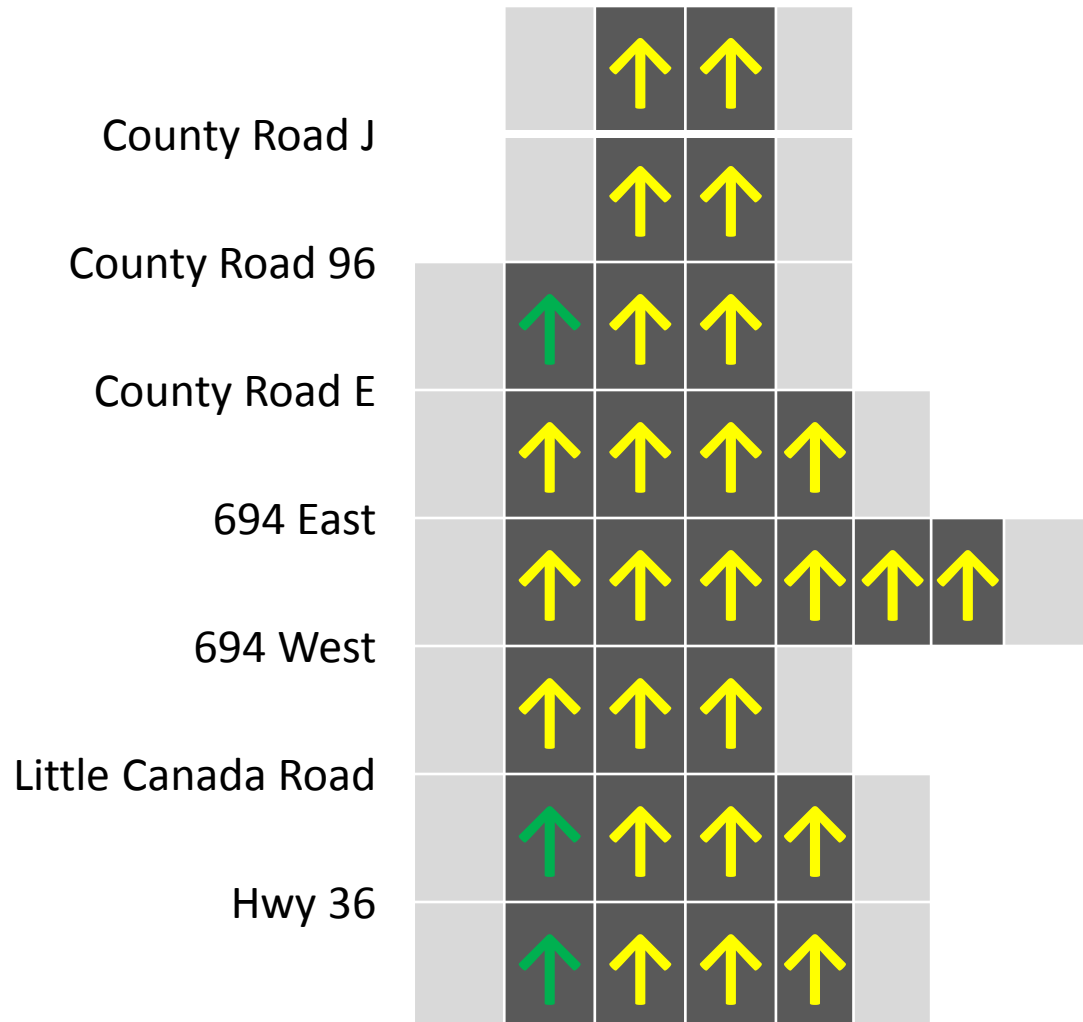
KEY	
Regular Lane	↑
MnPASS Lane	↑
Shoulder	



MnPASS with a Gap



KEY	
Regular Lane	↑
MnPASS Lane	↑
Shoulder	



MnPASS without a Gap



County Road J

County Road 96

County Road E

694 East

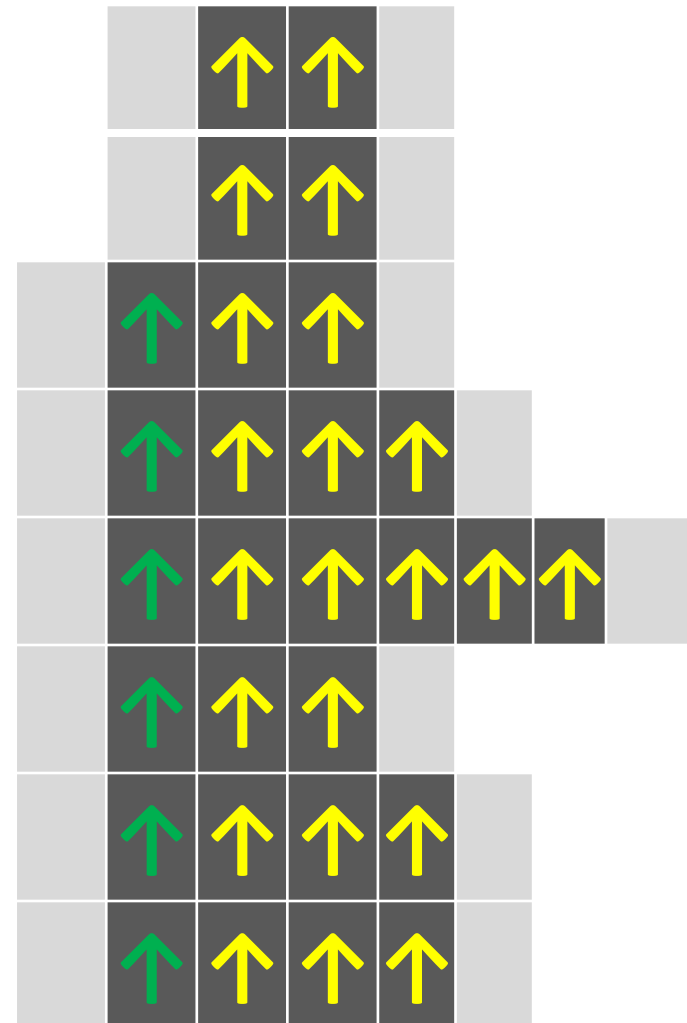
694 West

Little Canada Road

Hwy 36

KEY

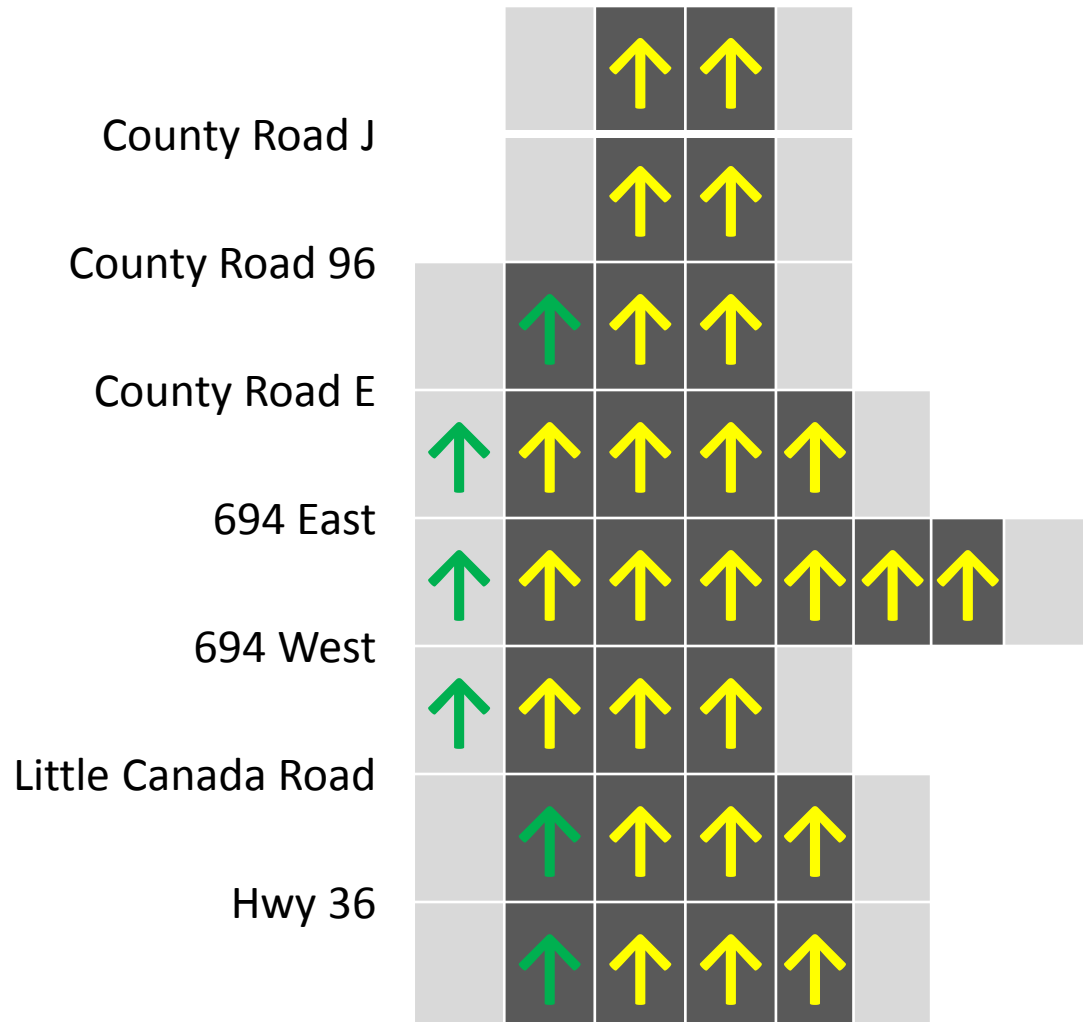
Regular Lane	↑
MnPASS Lane	↑
Shoulder	



MnPASS On Shoulder



KEY	
Regular Lane	↑
MnPASS Lane	↑
Shoulder	

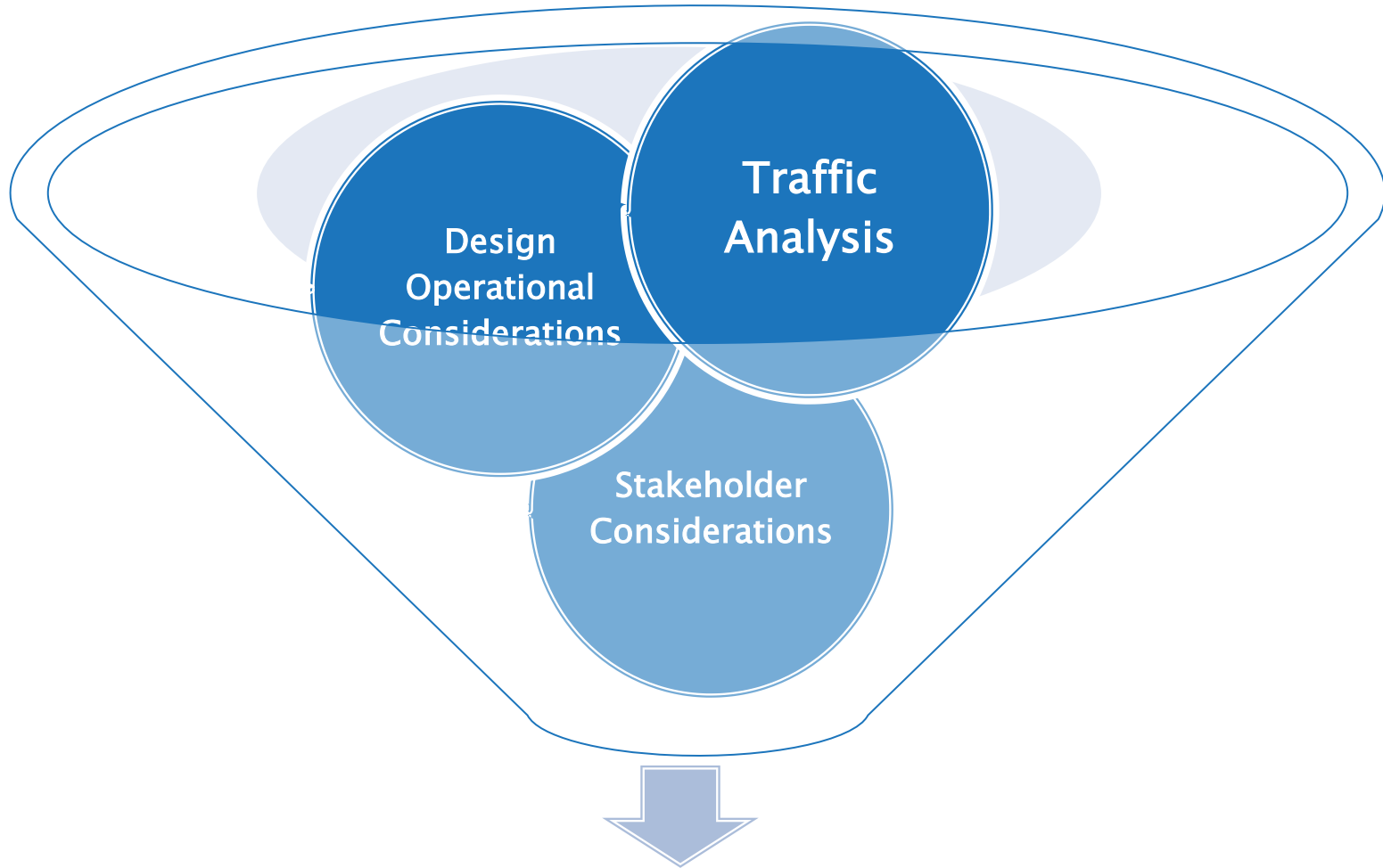


I-35E MnPASS Extension Study

Technical Analysis, Findings and Recommendations



Basis of Recommendation



Recommendation



Design/Operational Criteria

26 measures considered– 9 showed differences

Criterion	MnPASS with Gap Discontinuous	MnPASS without Gap Continuous	MnPASS on Shoulder Priced Dynamic Shoulder
1.1 / 1.2 Person/Vehicle Throughput	Good	Fair	Good
3.1 Incident Management	Good	Good	Fair
3.2 Maintenance	Good	Good	Fair
3.3 Enforcement	Fair	Good	Poor
4.2 Consistency w/ Driver Expectations	Fair	Good	Poor
4.4 MnPASS Continuity	Fair	Good	Fair
5.2 O & M Costs	Fair	Fair	Poor
6.1 Legal Considerations	Good	Fair	Good
Costs	\$10.7 M	\$11.3 M	\$24.0 M

KEY:

Good

Fair

Poor



Traffic Analysis Steps

1. Forecast travel volumes in 2017 and 2030
2. Utilize forecasted traffic volumes to model MnPASS With and Without a Gap Options in 2030
 - MnPASS on Shoulder – removed from analysis due to cost, operational issues, and lack of need for added capacity
3. Utilize 2030 results to select one concept for 2017 Analysis – *MnPASS without a Gap*
4. Compared traffic operations performance in 2017 between No Build & MnPASS without a Gap



The Traffic Analysis Process

Current Conditions

- Find one problem free day of real conditions (April 2013) for basis of traffic projections

Forecast Conditions

- Input the current condition data into Regional Model and project the data to 2017 and 2030 based on area growth assumptions
- Effort produces future Traffic Volume, Volume/Capacity, Transit Trips, VMT and VHT data

Model Traffic based on Forecast

- Input Forecasted Traffic Data into Traffic Simulation Model To Judge Operations of each lane and ramp under No Build and Concept options
- Effort produces performance data on: Level of Service, Average Speed, Vehicle and Person Throughput, and Weaving Movements



Key Findings from Traffic Analysis

► 2030

- No Build Scenario– Traffic conditions worse than today– growth in trips is limited by traffic conditions
- With and Without a Gap concepts shows Northbound problems as MnPASS lane ends north of Hwy 96– worse level of service than no build– but moves more vehicles and people than the no build
- With and Without a Gap show Southbound 35E carries more trips and people than no build, but at same or slightly worse level of service
- MnPASS lane performs at free flow condition in 2030 for both concepts

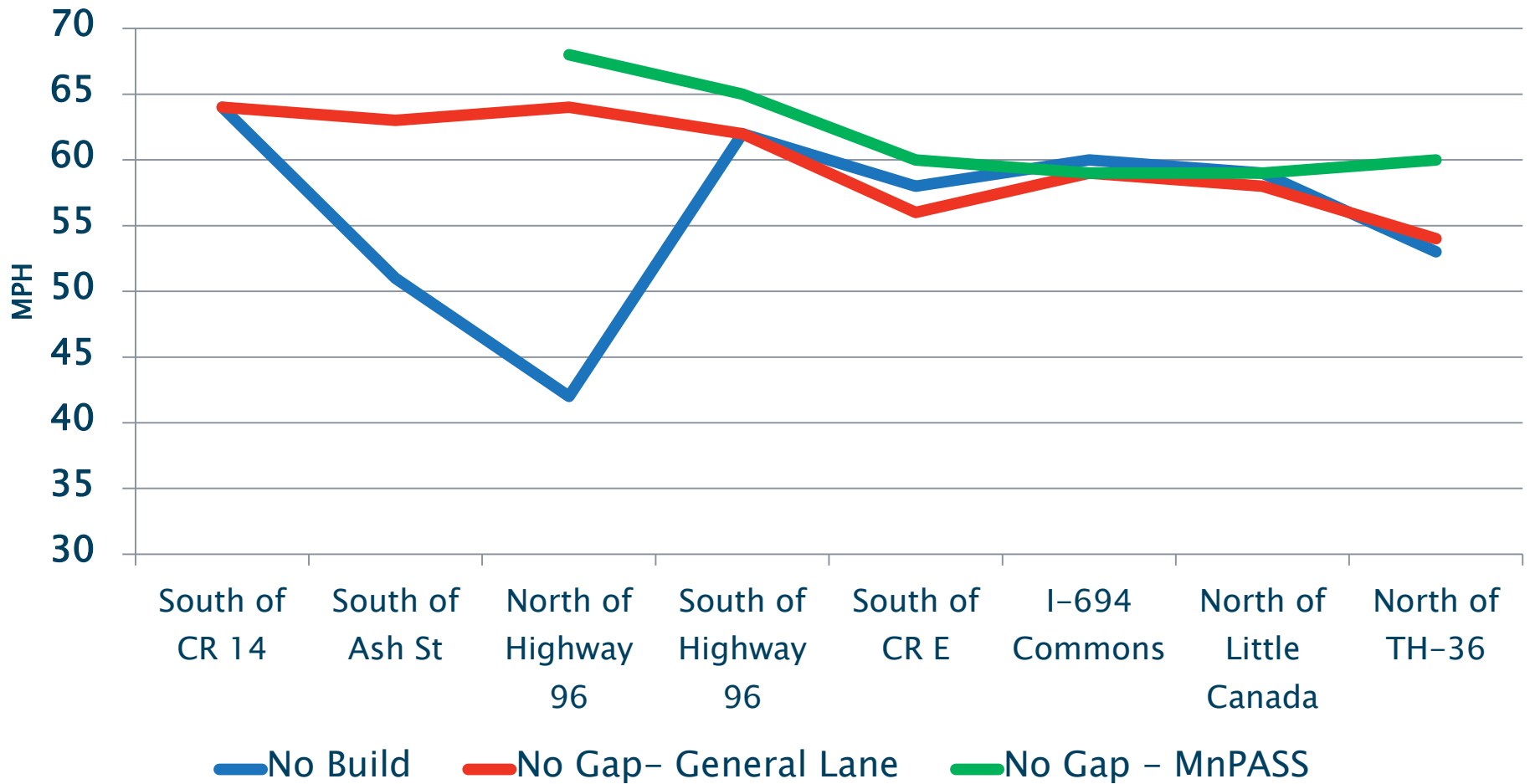
► 2017

- MnPASS without a Gap shows
 - Good improvement southbound and modest improvement northbound *for general purpose lanes*
 - MnPASS lane performs in uncongested condition in southbound and northbound directions



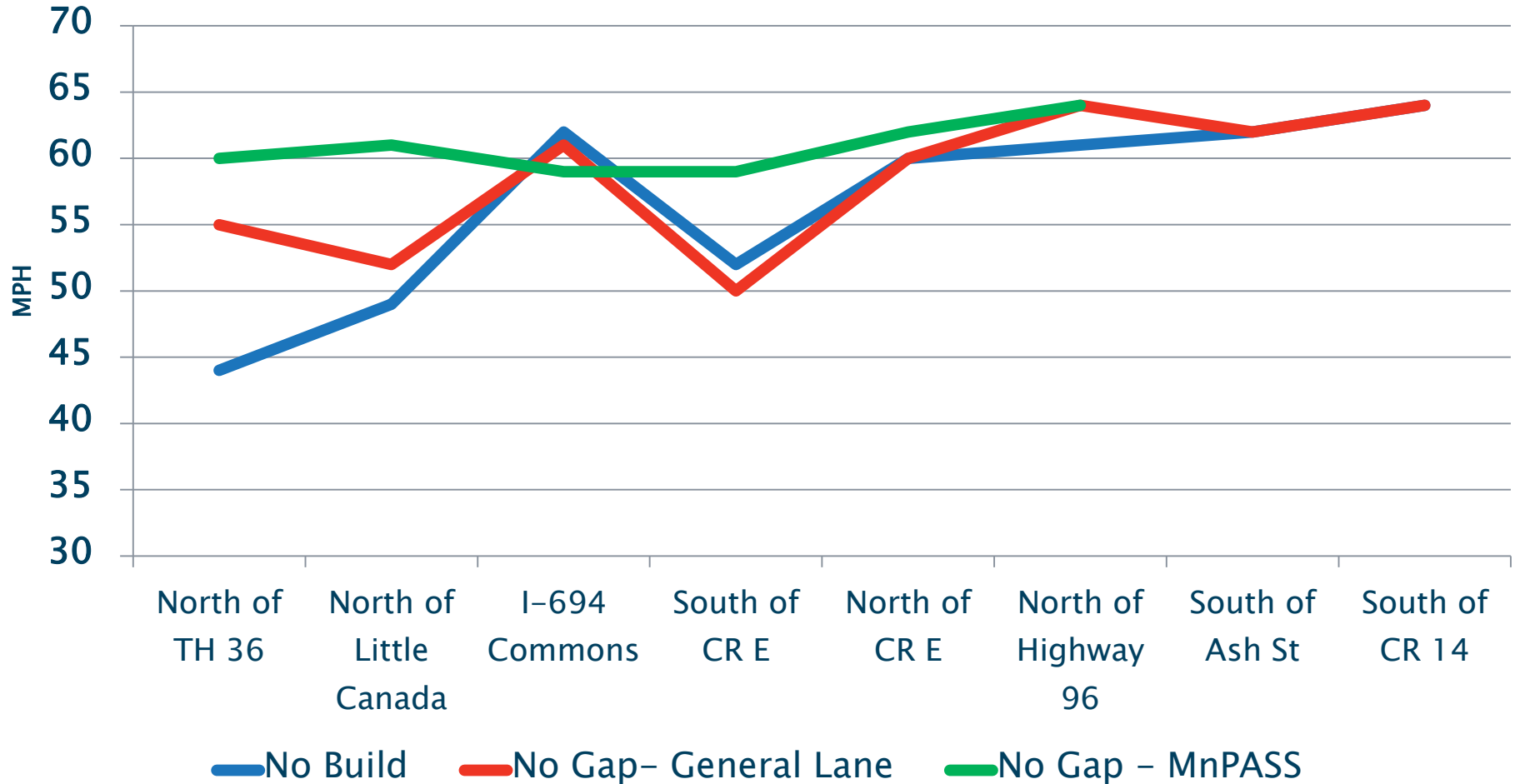
Southbound 35E

Average Peak Hour Speed (MPH)– 2017



Northbound 35E

Average Peak Hour Speed (MPH)– 2017



Key Conclusions from Traffic Analysis

- ▶ Analysis of the *No Build* Option indicates a need to extend MnPASS lanes north of Little Canada Road
- ▶ Each of the concepts considered show northbound operational issues if built only to CR 96
- ▶ A Hybrid Option could produce a better return on investment for the corridor than any of the three concepts considered



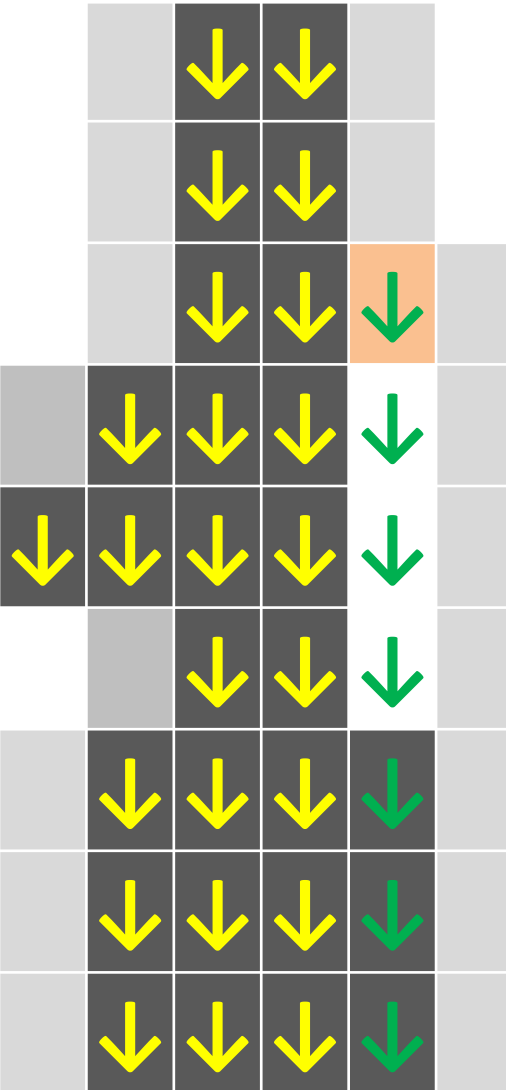
Technical Recommendation– Hybrid Option

- ▶ Northbound
 - MnPASS *with* a Gap in 35E/694 Commons
 - Extend MnPASS to County Road J
- ▶ Southbound
 - Start MnPASS lane at Goose Lake Road (south of CR 96)
 - MnPASS *without* a Gap in 35E/694 Commons
- ▶ Operate the recommendation through the 35E/694 Commons as a Pilot Test for 2 years– operational adjustments will depend on test results
- ▶ Future Phase – Extend MnPASS lanes to CR 14 when there is a future funding and construction opportunity



Hybrid Recommendation

Southbound



County Road J

County Road 96

County Road E

694 East

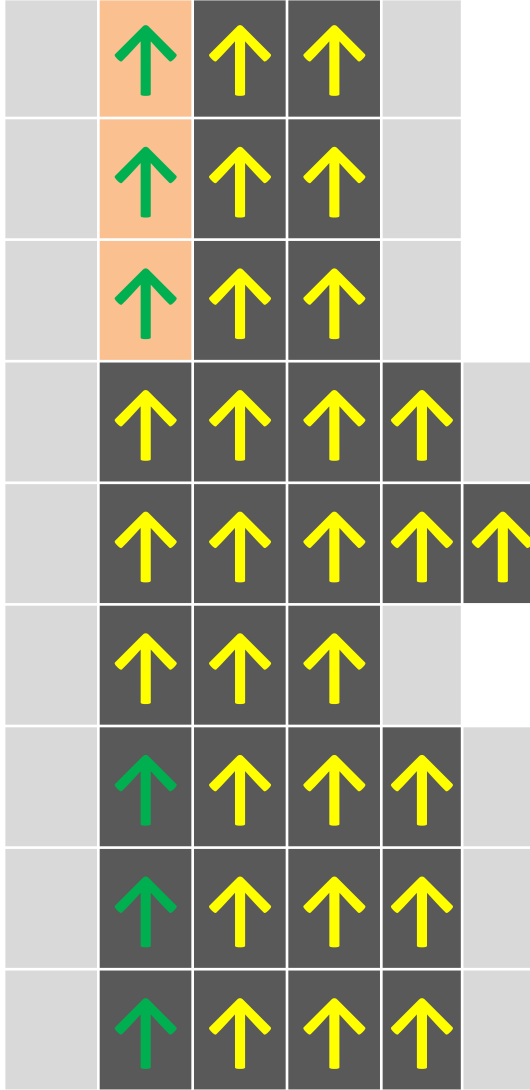
694 West

Little Canada Rd

Hwy 36

Maryland Ave






Northbound



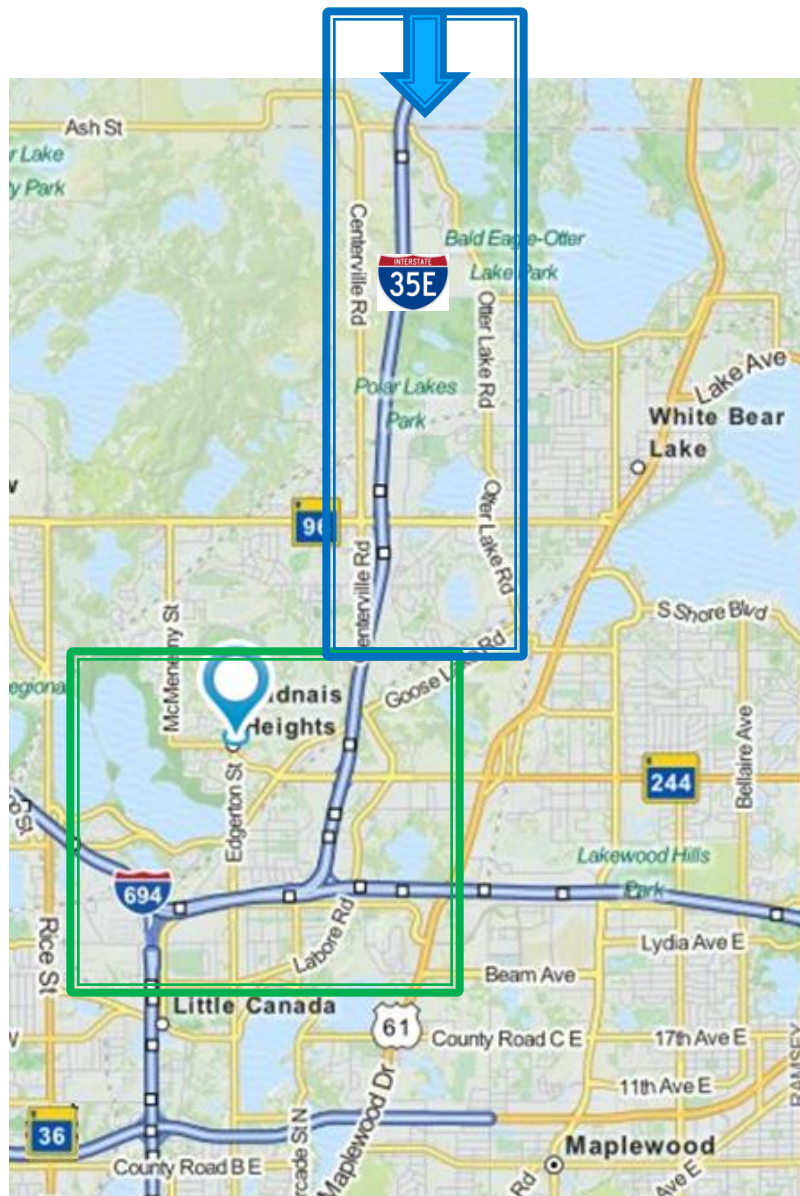
KEY

Existing

Recommended

Regular Lane		
MnPASS Lane		
Converted to MnPASS in AM Peak		
Shoulder		

Southbound I-35E Recommendation



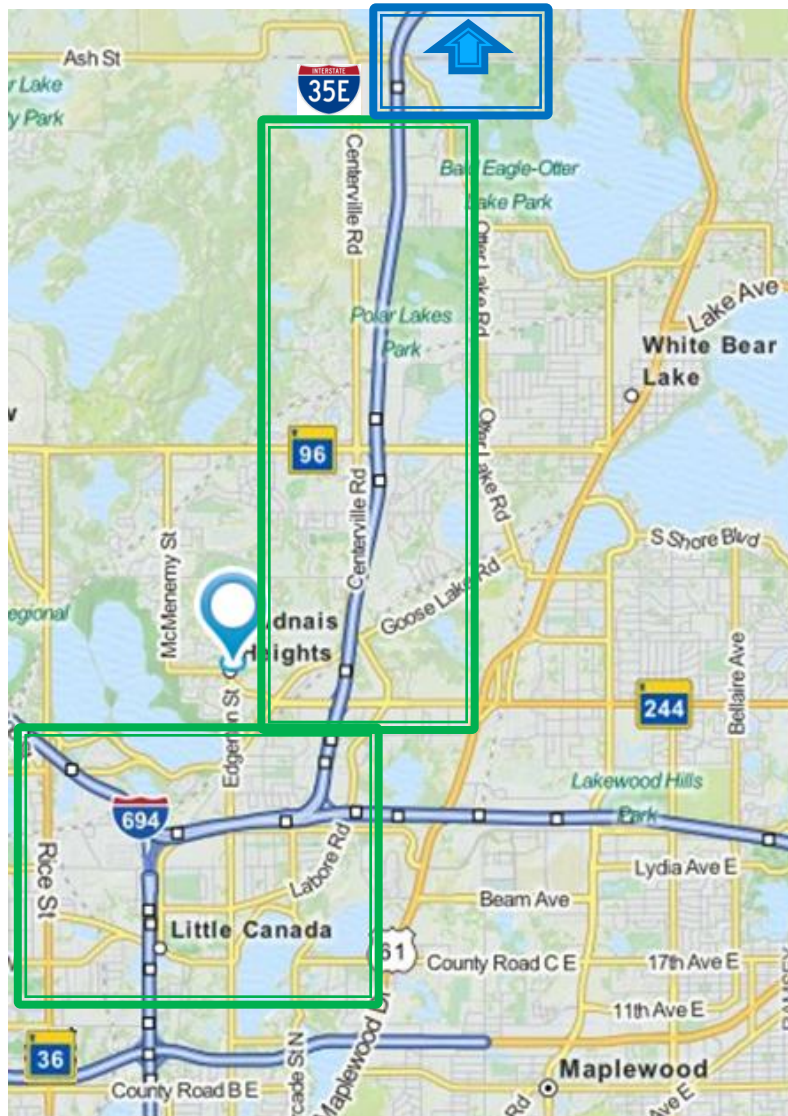
*Future phase: Add MnPASS Managed Lane from County Rd 14 to Goose Lake
Total length: 7.1 Miles*

*Add New MnPASS Managed Lane from Goose Lake Rd Bridges to County Rd E
Length of Expansion: 1.3 Miles*

*Convert Inside Southbound Lane of I-35E to MnPASS in AM Peak – 2.9 miles
(Without a Gap option)*



Northbound I-35E Recommendation



*Future Phase: Extend MnPASS Managed Lane From County Rd J to County Rd 14
Length: 3 miles*

*Add New MnPASS Managed Lane from County Road E to County Road J
Length of expansion: 5.1 Miles*

*No Changes from Current Conditions—
Gap in MnPASS lane from Little Canada Road to County Road E—
Length of MnPASS Gap: 2.9 Miles*



Operational Pilot Test

- ▶ The Hybrid recommendation through 35E/694 Commons would be implemented as a Pilot Test
- ▶ Pilot Test would evaluate the performance of MnPASS With a Gap (northbound) and MnPASS Without a Gap (southbound)
- ▶ Pilot Test implementation allows for modification to operations based on real world results
- ▶ Precedence for HOT Lane Evaluation Pilot Test
 - MnDOT – MnPASS– I-394 and I-35W
 - Seattle, Washington– WSDOT SR 167
 - San Diego, CA – CALTRANS – I-15
 - Los Angeles, CA – CALTRANS – 110
 - Miami, FL – FDOT – I-95



Basis for Technical Recommendation



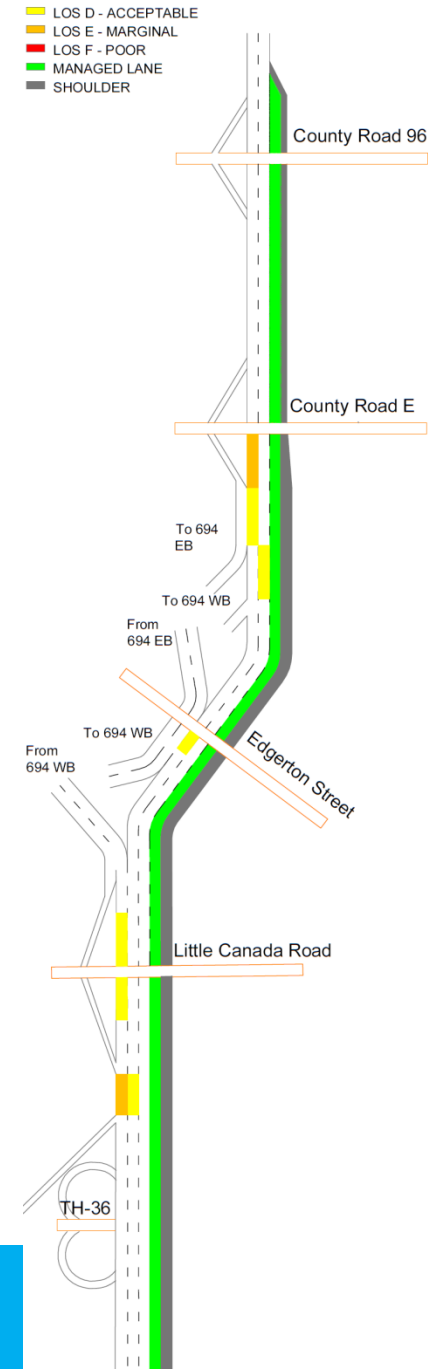
Southbound 35E

- ▶ Southbound 35E performs better than Northbound 35E in No Build Scenario
- ▶ Goose Lake Bridge Project adds 1.3 miles of new “MnPASS ready” capacity
- ▶ 1.3 Mile Length is too short of distance for a stand alone MnPASS lane
- ▶ 40% of traffic on I-35E at CR E is traveling south of Hwy 36– they would be prime customers of continuous MnPASS lane
- ▶ Solution:
 - Add MnPASS north of CR E– with Goose Lake Rd. bridge project
 - Convert inside lane between County Rd E to Little Canada Rd to MnPASS in AM peak – 2.9 Miles (Without a Gap option)
- ▶ Benefits:
 - Provides reliable option from south of CR 96 to I-94
 - Traffic flow in 35E/694 Commons remains acceptable
 - Traffic volume & person trips in 35E/694 Commons improve vs. no –build option
 - Southbound construction is mostly funded through existing projects – minimal additional cost



Southbound 35E

- ▶ Traffic Analysis of southbound 35E with inside lane converted to MnPASS shows acceptable or free-flow conditions within the converted area
- ▶ Conversion of lane to MnPASS will attract more person trips (than MnPASS with a Gap) to inside lane north of CR E as they gain reliable trip the entire length to I-94
- ▶ MnPASS lane from south of CR 96 to I-94 would perform reliably and in uncongested mode at opening in 2017 *and* 2030



Northbound 35E

- ▶ Traffic analysis shows problems expected in PM peak if MnPASS lane ends north of CR 96
- ▶ Conditions north of CR 96 do not improve in 2017 and are worse by 2030 under With a Gap and Without a Gap options compared to No Build
- ▶ Traffic problems do not exist on the general purpose lanes or MnPASS lane on opening day in 2017 if MnPASS is extended to County Road J
- ▶ Benefits
 - Resolves traffic problems that exist today without creating new problems north of CR 96
 - Length of MnPASS lane is sufficient to attract trips from I-694 as well as I-35E
 - Transit travel times and reliability to CR 14 Park and Ride improve
 - Travel times for general purpose lanes improve



Impact of Technical Recommendation



I-35E Corridor will have significant new capacity with Hybrid Option

- ▶ Northbound from I-94 to CR J
 - 9.2 miles of new managed lane
 - PM peak period – MnPASS
 - Off peak and weekends – General Purpose
- ▶ Southbound from south of CR 96 to I-94
 - 8.1 miles of new managed lane
 - AM peak period – MnPASS
 - Off peak and weekends – General Purpose
 - 2.9 mile reduction in General Purpose lane in AM Peak



2017 Travel Time Reliability Example

AM Peak	Southbound				PM Peak	Northbound		
	No Build	MnPASS Without GAP				No Build	MnPASS with Gap	
	General Lane	General Lane	MnPASS			General Lane	General Lane	MnPASS
CR 96 to Little Canada Rd	7 to 9 min	6 to 7 min	4 to 5 min		I-94 to Little Canada Rd	5 to 7 min	5 to 7 min	4 to 5 min
Little Canada Rd to I-94	6 to 11 min	6 to 11 min	4 to 5 min		Little Canada Rd to CR J	11 to 15 min	9 to 11 min	8 to 9 min
Total Travel Time Variability	13 to 20 min	12 to 18 min	8 to 10 min		Total Travel Time Variability	16 to 22 min	14 to 18 min	12 to 14 min



Cost

MnPASS on Shoulder	MnPASS With Gap	MnPASS Without Gap	Hybrid Recommendation
\$24.0 M	\$10.7 M	\$11.3 M	\$18 M*

*Cost estimate does not include potential right-of way costs

Schedule

Implement Hybrid with completion of Goose Lake Bridge and pavement work in 2016

– Project development timeline is tight with significant risk

Implement Future Phase to CR 14 when there is a future funding and construction opportunity



Steering Committee Discussion and Feedback on Concept Development, Technical Findings and Recommendations





I-35E MnPASS Extension Study: Land Use & Transit Enhancement

Lynne Bly, MnDOT

We all have a stake in **A  B**





Thank You – For more information, contact:

Brad Larsen

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brad.larsen@state.mn.us

Or for specific study components:

Concept Development

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dale.gade@state.mn.us

Land Use & Transit

Lynne Bly

MnDOT Metro Multimodal Planning

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or

Mary Vogel

University of Minnesota, Ctr. for Changing Landscapes

612-626-7417

vogel001@umn.edu

Or visit the Study Website:

<http://www.dot.state.mn.us/metro/projects/i35emnpassextension/index.html>

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